5.0 DESIGN CONCEPT ALTERNATIVE

5.1 Introduction

The improvement of US 60 will include the reconstruction of the roadway within its existing corridor and the realignment of portions of the route. Several alternative design concepts were considered for the several corridors under consideration (Section 4) with various combinations of roadway alignments and typical sections possible within each corridor. This section of the report describes the options considered following the Feasibility Study, provides an evaluation of the options studied further, and presents a preferred alternative.

As described in Section 4, the alternative segments are identified by alphanumeric designations (A, B, C, etc.). The roadway improvements investigated within each segment are referred to as "Design Concept Alternatives" and are identified as a subcategory to the segment. For example, design concepts associated with Segment A are referred to as Design Concept Alternatives A-1, A-2, etc.

Figure 5-1 delineates all design concept alternatives that have been considered for further study. The heavy black alignment represents the **design concept alternative segments that collectively comprise the preferred alternative**, as explained at the end of this section.

5.2 Design Concept Alternatives Studied

5.2.1 Typical Sections

Five typical sections were used in the development of the various design concept alternatives and are shown in Appendix A.

The "graded-ditch median" typical section with a 108-foot roadway separation represents the minimum width divided highway desired by ADOT. This typical section was used wherever a minimum roadway footprint was desired, such as across property under the jurisdiction of the State Land Department, or wherever the adjoining topography restricted the width of the reconstruction. The separation can be reduced to a minimum of 70 feet if either the topography or the right-of-way constraints don't allow the desirable 108-foot minimum. Elsewhere, whenever feasible, the "vegetated median" typical section was used so as to retain natural vegetation in the median area, thereby enhancing the route aesthetics and retaining the character of the scenic highway designation. The wider roadway separation utilizes independent alignments for each directional roadway, thus providing greater latitude in conforming the construction to the terrain.

Regardless of which typical section is implemented, the existing roadway is generally reused for one direction of travel. In those areas where the vertical profile required significant adjustment, such as Gonzales Pass, the existing roadway was not reused, but rather reconstructed to meet design standards.

5.2.2 Roadway Alternatives

Each of the design concept alternatives shown in Figure 5-1 was developed in detail based on the project objectives outlined in Section 1.4, using the design controls stipulated in Section 6.2. A narrative description of each design concept alternative is presented below. Shaded titles identify the **preferred alternative.** Plan and profile sheets for the preferred alternative are provided in Appendix B. Plan and profile sheets for other alternatives considered are provided in Appendix C.

Alternative A-1: Alternative A-1 consists of constructing a 4-lane divided roadway the entire length of Segment A and constructing a grade separated traffic interchange (TI) at SR 79 and at Queen Valley Road.

The alternative begins with the reconstruction of the US 60/SR 79 intersection into a grade separated interchange. At the beginning of Alternative A-1, the existing EB and WB lanes will be reconstructed to raise the profile of the mainline to go over the reconstructed SR 79 roadway. The EB and WB horizontal alignments will be adjusted to shift the alignment nearly 1200 feet south of the existing "T" intersection to avoid significant property takes. The separation between the two roadways will vary from a desirable separation of 108 feet on both ends of the interchange, to a minimum separation of 70-feet at the overcrossing of SR 79. The reduction in centerline separation will limit the amount of borrow required to construct the interchange, while still providing enough separation to develop HOV lanes, or an additional interior lane in the future. Once the mainline returns to the existing grade beyond SR 79, the divided roadway concept continues with the WB 2-lane section using the existing US 60 roadway and the new EB 2-lane section constructed parallel to and 108 feet to the south.

Florence Junction TI: Several configurations were considered for the US 60/SR 79 interchange. A trumpet (system-to-system) interchange was initially considered to provide unencumbered turning movements in all directions. This type of interchange, however, would restrict any access within or near the interchange. Long frontage roads and additional interchanges would be required to provide access to the several private land parcels and existing businesses near the intersection. In addition, upon reviewing the turning movements, it was concluded that with a dual left turn lane for the NB-WB movement, a standard diamond interchange would operate at an acceptable Level of Service C in the design year, eliminating the need for free turning movements in all directions. Finally, there are on-going discussions within the County to build a new roadway to Florence, with the roadway originating in Apache Junction or East Mesa. If this new roadway were constructed, the projected turning movements at this Florence Jct. intersection would decline even further. It was therefore concluded that a trumpet interchange was not advisable.

Two diamond configurations were also considered for the interchange. Since the horizontal geometry of the EB and WB lanes is acceptable, raising the grade of SR 79 to go over the existing US 60 lanes was initially considered. However, the change in the profile of SR 79 would restrict much of the development on the parcels adjacent to the interchange. The second alternative was to raise the grade of US 60 to go over SR 79. This alternative would provide easy access to the adjacent parcels, and would also facilitate phased construction of the interchange improvements.

SR 79 itself will be reconstructed through the interchange limits, providing two through lanes in both the NB and SB directions. In addition, dual left turn lanes will be constructed for the NB to WB turning movements. North of the interchange, SR 79 will be continued to provide access to parcels north of US 60. South of the interchange, SR 79 will be widened to initially provide two SB lanes to provide for capacity and weaving of the US 60 traffic, and through traffic from the properties north of the interchange. The extra, outside SB lane will be dropped after the appropriate acceleration and weave distance is provided. In addition to the added SB lane, a free-right turn lane will be added to the EB off-ramp onto SB SR 79 to facilitate the heavy EB-SB movement. All

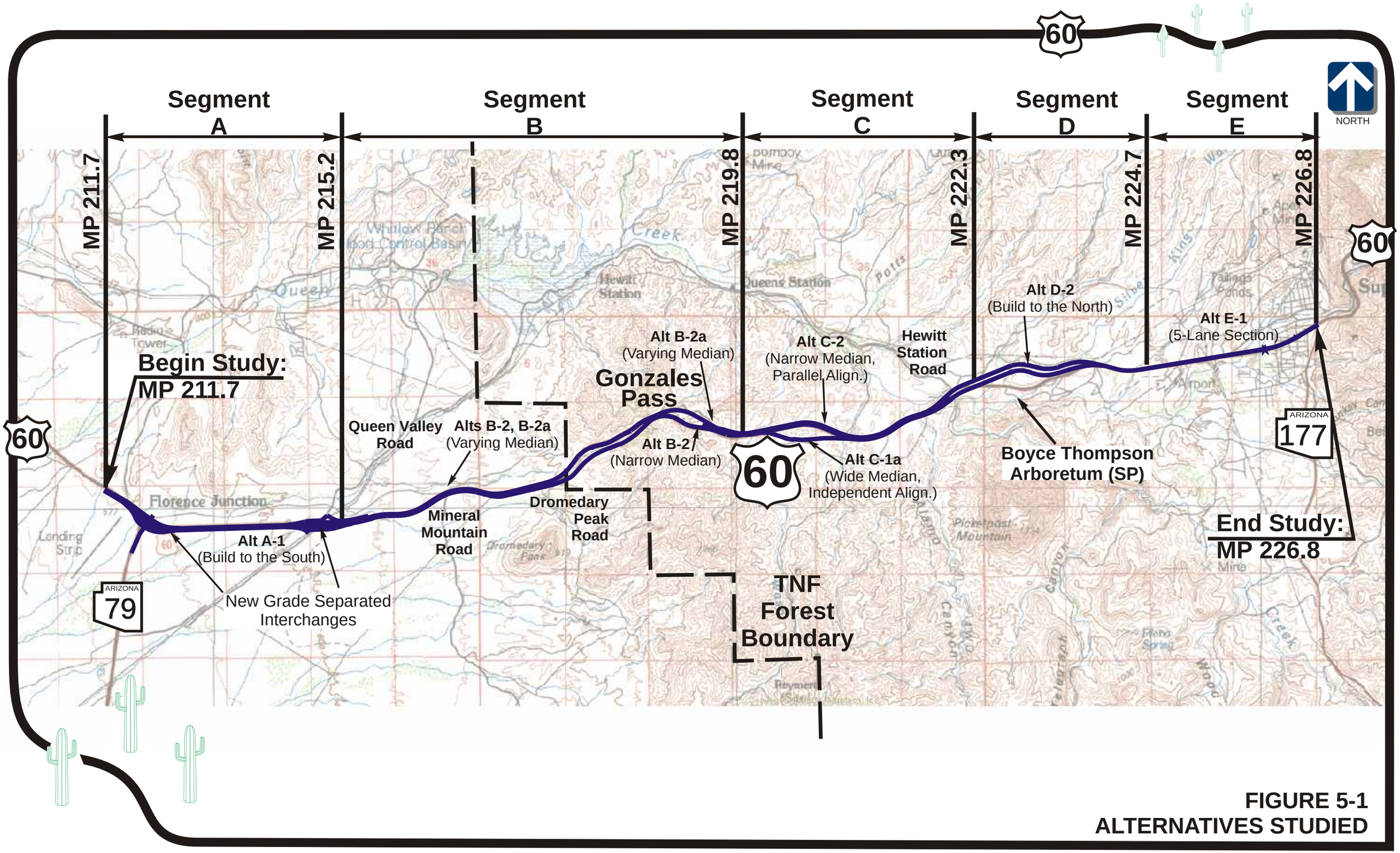


FIGURE 5-1
ALTERNATIVES STUDIED

of the improvements will eventually taper to match the existing roadway section.

Although SR 79 will continue to provide access to parcels south of the interchange, parcels that had previously obtained direct access to US 60 will be required to use the abandoned portions of US 60 as access roads. El Camino Viejo, which currently has direct access to US 60 just west of the intersection of SR 79, will continue to tie to the old US 60 access road. The industrial buildings and Texaco Star Mart will also continue to access this old US 60 roadway from their current access points, as will all access to State Lands and private property located north of US 60.

Private property south of the new highway will continue to access both US 60 and SR 79 directly from SR 79. Access control will be provided in the raised median of the interchange to prevent left turns and access immediately in the vicinity of the interchange and ramps.

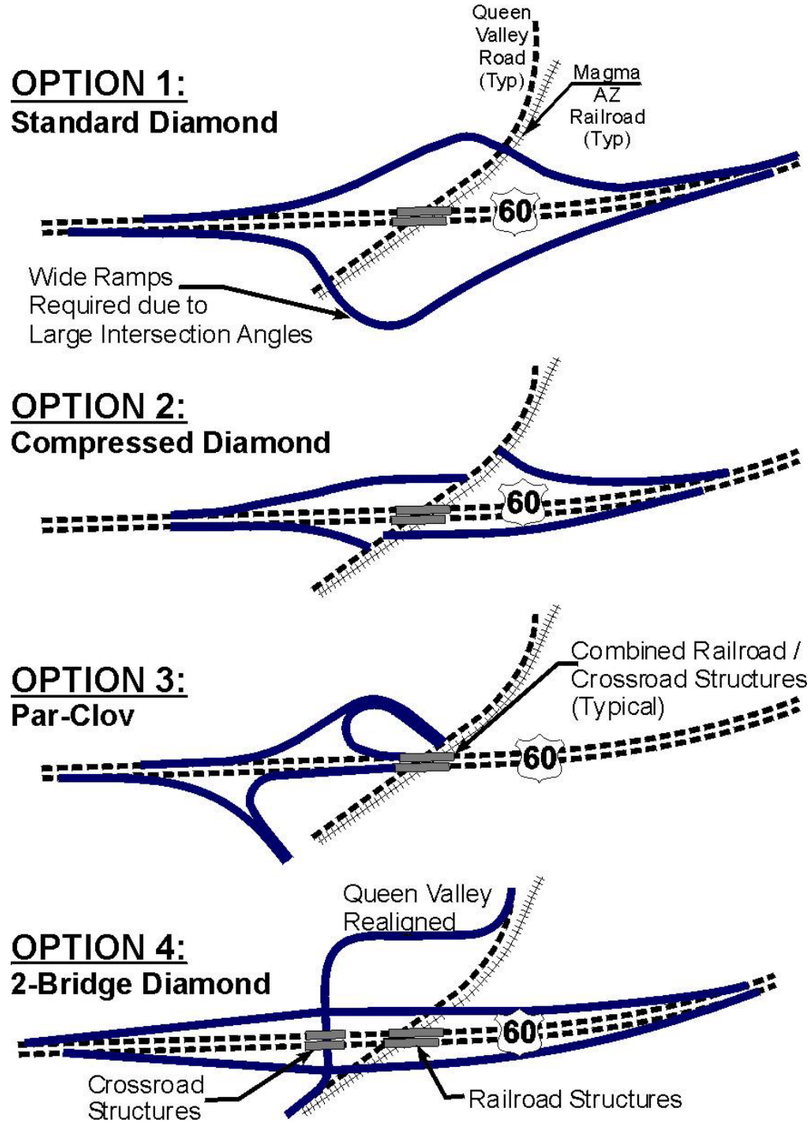
East of the SR 79 interchange, the A-1 Alternative continues with the new EB lanes constructed 108 feet south of and parallel to the existing roadway. The area is nearly flat, with no significant topographic features. While the 108-ft median separation is considered a minimum, it will still provide the opportunity to retain native vegetation in the median. Widening the roadway separation would not enhance the corridor aesthetics, and would only add to the cost of R/W and the interchange that is required at Queen Valley Road. Since the existing roadway was recently re-surfaced and meets all of the design recommendations, no improvements to the WB lanes would be required. The 108-ft separation also supports construction of the new interchange at Queen Valley Road. The new EB overpass and EB ramps can be constructed without interference to the existing highway and cross road. While the EB alignment may be fixed at 108-ft south of the existing, it may be beneficial to build the new WB overpass closer to the EB roadway, to reduce the amount of borrow required to construct the interchange.

Queen Valley TI: An additional grade separated interchange is necessary at Queen Valley Road (also known as Hewitt Station Road – West) to provide access to US 60 while meeting the requirements of a fully access controlled facility. Consideration was given to using a diamond interchange with either US 60 crossing over Queen Valley Road, or under it. The most influential factor to selecting the type of interchange was the railroad. The Magma Arizona Railroad tracks, which were constructed in 1915, cross US 60 at grade and are still maintained and occasionally used by BHP Copper. To continue an at-grade crossing on an access controlled roadway, even if used only sporadically, could cause driver confusion. Options were considered to shift the interchange to the east and west of the current RR crossing, however these options still required an at-grade crossing of US 60 and the new ramps as well. Finally, raising the railroad over the highway was also considered. However, the required grades of the railroad would result in very long approaches with significant fill/borrow requirements. The railroad itself is also a historical element, and cannot be relocated by the State for transportation purposes. It was therefore concluded that the preferred solution would be to reconstruct Queen Valley Road as close as possible to the railroad tracks to minimize the length of the new US 60 overpass bridges. BHP has requested that standard railroad clearance requirements be provided for both horizontal and vertical alignments at the crossing. The WB off-ramp and EB on-ramp will still cross the tracks at grade, with adequate cross gates and signing installed.

The angle that US 60 crosses Queen Valley Road presents some difficulty for the ramp geometry. ADOT recommends that ramps intersect crossroads within 15 degrees of a perpendicular crossing. Four different alignment configurations were considered, all with US 60 going over the railroad, as described earlier. The four options include (See the figures to the right):

- **Option 1**: Standard Spread Diamond with the on/off ramps constructed at grade and the termini aligning with each other.
- **Option 2**: A Diamond Configuration, but with the ramp termini designed independently of one another. For this design, each ramp was designed to require the least amount of R/W.
- **Option 3**: A Partial-Cloverleaf (Par-Clo) design, with both the on/off ramps located on the west side of the railroad tracks.
- **Option 4**: Construct the RR overpass separate from the Queen Valley overpass, allowing the Queen Valley intersection with US 60 to be constructed perpendicular to the highway, and building a separate, standard spread diamond interchange.

All options being considered meet intersection sight distances and geometric criteria. While all options can be signalized, some may require more equipment, or operate less efficiently than others. The advantages and disadvantages of each option are summarized in the following table:



QUEEN VALLEY TI CONFIGURATION OPTIONS		
Interchange Configuration	**Advantages**	**Disadvantages**
1) Standard Diamond	• Easy future signal operation • Meets driver expectation	• Requires more R/W than Options 2 or 3
2) Compressed Diamond	• Requires less R/W and less costly to construct • Constructed at several valley locations to avoid R/W and irrigation canals.	• As opposing ramps are not aligned, signalization, when required, will be more difficult to operate efficiently and costly to install. • Does not meet driver expectation
3) Partial Cloverleaf	• No crossing of R/R tracks required • Requires less R/W than Option 1	• greater bridge widths are required on US 60 to accommodate EB on-ramp/accel lane, and the WB del. Lane.
4) 2-structure Spread Diamond	• Improves ramp and intersection geometry • Better intersection visibility and signal operation • Easy construction phasing	• Greater cost with 2 structures • Requires realignment of Queen Valley Road • Requires more R/W than all other alternatives.

East of the Arizona Magma Railroad, there is an existing dirt road on the south side of US 60 that provides access to recreation sites and an artillery range. To retain access control on the highway, Queen Valley Road will be extended south of the EB ramps and a new crossing of the railroad will be required to maintain access to the State Lands dirt road.

The improvements continue just over ½ of a mile beyond the railroad tracks to allow all of the intersection improvements to be constructed as part of this segment. As the WB improvements return to the existing roadway, the new EB roadway is constructed 108-ft south of the existing, keeping the minimum desirable separation, and providing for easy interim crossovers when these segments are constructed. Incorporating a wider roadway separation was not considered, as there are no topographical, aesthetic, or cultural features that will be saved as a result of widening the separation in this area. In addition, a wider separation would have required acquisition of more R/W, and possibly result in encroachment into adjacent drainageways.

Alignment B-2: Alternative B-2, the first of two similar alternatives through the Gonzales Pass Segment, consists of constructing a 4-lane divided roadway that reuses the existing roadway for one direction of travel, and constructs a new 2-lane roadway on an independent roadway alignment, located generally 108- to 150-feet adjacent to the existing, except when the alternative makes the approach from the west to the Gonzales Pass summit, where the roadway separation increases to better blend in with the topography and avoid encroachment into a major drainageway.

The alternative begins as an extension of the A-1 Alternative, with the existing roadway used for the WB lanes, and new EB lanes constructed on a generally parallel alignment that best fits the topography south of the existing roadway and minimizes impacts to drainageways. When detailed mapping becomes available, the new EB roadway should be located approximately 150-feet south of the existing roadway in areas where significant cuts or encroachments into the numerous drainageways that parallel the roadway can be avoided by widening the median. The wider separation will also allow median vegetation to be retained, adding to the aesthetic value of the scenic corridor, while not significantly adding to the cost of the project, although additional R/W will be required from State Lands. In areas where greater cuts could be encountered with the wider separation, such as cutting through the knoll near MP 216, the separation should be reduced to the minimum 108-feet to still maintain the desired separation and provide some opportunities for natural vegetation to grow in the median while reducing the cuts and resulting exposed, excavated surfaces.

Near MP 216.5, the existing roadway becomes a ½-mile long tangent leading to the TNF boundary. The new EB roadway is to be located 108-feet south of and parallel to the existing roadway. This separation will allow vehicles to turn / U-turn at the median crossover at Dromedary Peak Road, but will also facilitate construction of a future grade separated interchange at this location should the surrounding area develop. As the entire highway leading up to the forest boundary has been designated as fully access controlled, at-grade intersections will not be allowed. While a grade separated interchange is not warranted at this time, only a simple intersection is proposed as an interim improvement to allow continued access to the State Lands for recreation purposes. Once development occurs, a separate roadway network independent of the highway should be developed for the area that includes construction of the highway underpass and associated ramps at this point.

Approaching the TNF lands, the topography becomes more mountainous in nature, with well-defined drainageways and steep hill slopes. While the WB roadway continues to use the existing roadway leading to Gonzales Pass, the EB roadway departs from the existing roadway corridor, and follows an independent alignment on the south side of the drainage ravine that leads to Gonzales Pass. Near MP 217.2, the EB roadway crosses the drainageway. While the drainage ravine further up the highway is well defined, the contributing area of the drainage basin is rather small. As such, only a box culvert crossing is required to convey the water under the roadway, with minimal disruption to the channel. The EB alignment then follows a small ridge that leads to the hills that parallel the south side of the drainage ravine. The roadway eventually transitions from following the ridge to traversing the side slope of the hills to maintain the proper roadway grade and meet the existing roadway at Gonzales Pass at the desired elevation. The EB horizontal/vertical alignments were designed to minimize the cuts/fills and hence the appearance of scars to the hillside that will be visible from the WB roadway.

Near MP 218, the drainage ravine has a “kink” in the flowline that forces the drainage way within 20-feet of the EB roadway alignment. Several concepts were considered to keep the roadway improvements from impacting the drainageways. The proximity of the roadway to the streambed would result in 260-feet of the channel being filled. Four alternatives have been considered to mitigate this encroachment:

1. Construct a bridge crossing to span the drainageway
2. Construct a retaining wall along the downstream side of the roadway to contain the embankment
3. Allow the roadway embankment to fill in the drainageway and reconstruct the channel at the toe of the embankment
4. Allow the embankment to spill over the drainageway and pass the water under the embankment through pipe culverts.

See the drainage discussions in Section 6 of this report for the discussion on the advantages and disadvantages of the above alternatives. For the purposes of the DCR, we are recommending that Alternative 4 be implemented.

As the EB and WB roadways approach Gonzales Pass, they converge at the summit, and the improvements shift from the south side of the existing roadway, to the north/northeast side of the existing as the hills on the south side are much larger with very tall, steep slopes. The transition is accomplished with the EB roadway aligning with the existing roadway around the north side of the large mountain at MP 218.6. The WB roadway departs from the existing roadway near MP

218.3 to follow a new alignment that is generally 108-feet north/northeast of the existing roadway.

Through the summit area, the profiles of both roadways differ from the existing to provide the necessary vertical stopping sight distance over the summit. As such, while portions of the new roadway may follow the existing roadway corridor, the profiles of the improvements differ from the existing to MP 219.3. To avoid making additional sliver cuts into the tall cut faces already created as part of the original highway construction, the horizontal alignment of the EB is to be shifted slightly east of the existing centerline. In addition to the vertical profile changes, the shift to east will provide room for the desired shoulder widths, and larger longitudinal ditches that are used both for drainage, and rock-fall containment. These changes cannot be completed until detailed mapping is available.

At Gonzales Pass, the WB is constructed on a new alignment that is 108-feet north/northeast of the EB to provide the desired separation, and still have the opportunity for vegetation to grow in the median. The improvements traverse the hills and valleys adjacent to the existing, resulting in cuts and fills that will approach 85-feet in height. The improvements continue at the 108-feet offset through this canyon on the east side of Gonzales Pass until the end of this segment at Reymert Wash. The existing roadway from MP 219.3 to the end of the segment will be used for the EB travel.

Alternative B-2a: The second alternative within this segment is Alternative B-2a. From the end of the A-1 Alternative to the summit of Gonzales Pass, Alternative B-2a is identical to Alternative B-2. East of the summit, however, Alternative B-2a has the new WB roadway on an independent alignment where the separation from the existing roadway varies from 108- to 500-feet, allowing the existing hills and landforms to separate the two roadways and retain more natural topography in the median. Also similar to B-2, the EB roadway must be reconstructed to MP 219.3 to provide the necessary profile improvements to achieve the required stopping sight distances. While there will be significant cuts and fills on both sides of both the EB and WB roadways, maintaining the hills and valleys between the two roadways retains the rugged and scenic character of the roadway.

East of the summit, the WB roadway follows a portion of the original roadway corridor, keeping the improvements on the east face of the hills that are on the east side of the existing roadway. The profile of the WB roadway mimics the new EB profile, with the horizontal alignment adjusted to minimize the cuts and fills on both sides of the roadway. Near MP 119.3, the WB roadway returns to a parallel alignment with the existing, located 108-feet northeast of the existing, to avoid encroachment into a drainageway, and to avoid the relocation of an existing 10-inch gas line. From MP 219.5, again similar to Alternative B-2, the WB is located parallel to and 108-feet north of the existing roadway, which is used for the EB lanes to the end of the Segment at Reymert Wash.

Alternative C-1a: Alternative C-1a utilizes the existing roadway as a 2-lane WB section, and builds a new 2-lane EB roadway that roughly follows portions of the original US 60 roadway. The EB alignment is developed independent of the current roadway through most of the segment, located between 108 and 1200 feet south of the existing US 60 highway. Just beyond MP 221, the EB roadway returns to the existing roadway corridor, being located 108-feet south of and parallel to the existing roadway for the balance of the segment to avoid the abrupt terrain further south, the Picket Post trailhead and parking area, and to minimize encroachment into the Boyce Thompson Southwestern Arboretum.

The new EB lanes begin near MP 219.5, within the last portion of the B Segment. The EB roadway departs south of the existing roadway to cross Reymert Wash and follow the original roadway to Superior. East of Reymert Wash, the alignment heads south between two knolls with two 4 degree reversing curves to locate the roadway in a valley in the hills that are south of the current roadway. As a result, the new EB alignment is totally hidden from the view of the existing between MP 220 and 221, enhancing the character of the scenic roadway. The terrain in the valley where the EB roadway is located is gradual and rolling, with mountains located to the north and south. As the EB alignment approaches MP 221, crossing over the section line between Sec 10 & 11 of Township 2 South –Range 11 East, it departs from this original roadway corridor and remains on an easterly bearing to return to the US 60 corridor that exists today.

As the EB roadway returns to the existing US 60 corridor, two Forest Service roads are encountered; FS Road 295 near MP 221.0, and FS Road 231 near MP 221.5. One median crossover will be provided to service FS Road 231, the access to the Picket Post trailhead. Access to FS Road 295 will continue from the WB roadway with a right-in, right-out turnout, but no median crossover will be provided, as the two Forest Service roads are located too close together. In addition, FS Road 295 can be accessed from Hewitt Station Road, further east on US 60. No other access points are maintained on this alternative. Therefore, the current access provided to the old roadway alignment, defined as FS Road 310 near MP 222, will be discontinued. Access to Forest Service lands previously accessed from this road can be obtained from FS Road 231 described above.

For the balance of the alternative, the EB improvements remain parallel to and 108-feet south of the existing. Greater separation is not desirable, as cuts to the hills south of the existing roadway would be encountered. As the improvements approach Queen Creek, the EB improvements are located upstream of the existing bridge crossing, providing a near perpendicular crossing of the creek in the following segment.

Alternative C-2: The second alternative within this segment is Alternative C-2, which is a continuation of the B alternatives that basically constructs a new 2-lane WB roadway that parallels 108 feet north of the existing roadway. Near MP 221, the improvements shift from the north side of the existing roadway, to the south side to avoid encroachment into the Queen Creek. The shift to the south side avoids a portion of the creek that parallels the northern embankment of the current roadway downstream of the current bridge crossing, near MP 222. Once the transition is made beyond MP 221.5, the roadway improvements continue parallel to and 108-feet south of the existing roadway for the balance of the segment.

Alternative C-2 was designed to keep the roadway improvements and encroachments into the forest to a minimum. The new WB roadway section is constructed 108-feet north of and parallel to the existing. The topography north of the existing roadway nearly matches the current roadway profile, with very gradual changes in topography. The finished improvements would have very few exposed cut faces on the north side as the terrain falls away to the north into a meandering drainageway that parallels the existing road to MP 220.8. The earthwork for the improvements through this segment is minor, and nearly balanced.

Beyond MP 221, the improvements shift from the north side of the existing, to the south side. The resulting cut heights are smaller, and a balanced earthwork project is more easily achieved with the improvements on the south side. In addition, maintaining the improvements on the north side would result in significant encroachment into the Queen Creek.

Similar to Alternative C-1a, access will be reduced through this segment. One median crossover will be provided adjacent to FS Road 231, the access to the Picket Post trailhead. Access to FS Road 295 will continue from the WB roadway with a right-in, right-out turnout, but no median cross-over will be provided as the two access points are located too close together to provide separate median crossovers.

Secondly, FS Road 295 can be accessed from Hewitt Station Road, further east on US 60. Access to FS Road 310 near MP 222, will also be discontinued. Access to forest service lands previously accessed from this road can be obtained from FS Road 231 described above.

Alternative D-2: Alternative D-2 begins as a continuation of the C Alternatives, with the existing crossing of Queen Creek used for WB travel and the new EB lanes constructed parallel to and 108 feet southeast of the existing roadway. It was concluded during the scoping meetings that widening the roadway within the existing highway corridor directly adjacent to the main entrance and exhibit halls of the Boyce Thompson Southwestern Arboretum would not be acceptable. As a result, both the EB and WB parallel roadways depart from the existing roadway corridor on a new alignment that avoids the lands of the Arboretum, and locates the highway between the large hill north of the State Park and the Magma Arizona Railroad. Once beyond the hill, the highway nearly parallels the railroad until the improvements return to the existing highway corridor near MP 224. At this point, the divided highway transitions to an undivided highway as the improvements enter the Town of Superior.

Alternative D-2 was developed to maintain the rural, limited access, divided highway section that was desired through the Forest Service lands. However, there are several direct access points to the existing highway through this segment. By relocating the new highway north of the existing roadway, the current roadway can be used as an access road to provide service to the Arboretum, as well as other adjacent private properties. To provide a single point of access for the area, a new intersection will be provided nearly 1/3 mile north of the current intersection of Hewitt Station Road US 60. The intersection is located on a tangent portion of the relocated highway, making a perpendicular intersection with the new access road and the new highway, providing adequate stopping sight distance to both Hewitt Station Road and the Arboretum Access Road.

Beyond MP 223, on the new highway alignment north of the Arboretum, the improvements are maintained as close as possible to the Magma Arizona Railroad, both to minimize cuts into the hills north of the Arboretum, and to minimize the R/W required from private properties. As the improvements approach the private R/W, the centerline separation is reduced from the 108-ft maintained prior, to a 70-ft separation adjacent to the private property. While this separation still requires private property to be acquired, it is reduced while still maintaining the absolute minimum centerline separation. Several alternatives were considered to avoid the property, including:

- Developing a couplet, using the existing roadway for EB travel, and a new WB alignment between the private property and the railroad. This alternative was eliminated as it maintained private property in the median of a major highway. Access was difficult and the operation was not meeting the objectives stated earlier for a divided highway.

- Shifting the improvements north of the railroad. While this would avoid the property, two crossings of the railroad would be required, both requiring grade separated crossing structures. The result is too costly.

- Shifting the improvements slightly north and relocating the railroad. The age of the railroad makes the facility a historic feature. In addition, the topography to the north would be too mountainous and abrupt to relocate the railroad onto without significant earthwork costs.

- Alternatives are being considered for providing a new highway alignment to the Globe/Miami Area. One alternative is to follow the Silver King Wash from this location. As such, the current D-2 alignment is the most consistent with developing this future, divided roadway to the north.

Approaching MP 224, the roadway crosses over the Silver King Wash with a multi-cell box culvert with a near-perpendicular crossing. Through this final curve of the segment that approaches the Town of Superior Limits, the roadway transitions to a 5-lane rural roadway section. Through the transition, no access to adjacent property will be provided to eliminate the possibility of drivers entering the highway in the wrong direction. As such, all private property in the area will continue to use the existing US 60 roadway to access the new Hewitt Station/Arboretum Access road to the west. The transition to the 5-lane was made at this location to minimize cuts in the adjacent topography, and maintain separation from the railroad.

Alternative E-1: Alternative E-1 is the only alternative proposed in this segment and consists of constructing a 5-lane undivided roadway the entire length of Segment E. The five-lane section will include a continuous left turn lane to provide access to the numerous driveways and cross streets. The roadway section proposed west of the intersection of the Queen Creek Bridge will be a rural 5-lane section with paved shoulders while east of the Queen Creek Bridge, the roadway section will be an urban section including curb, gutter, sidewalk, and lighting to match the recent lighting/landscaping improvements.

The 5-lane section was proposed to minimize R/W requirements through this developed portion of town. The center turn lane also provides safe left-turn access into the numerous turnouts and cross streets through this section. Two different roadway sections either with or without curb and gutter are proposed to match the existing conditions within the Town. There are several sections where parallel parking is allowed on US 60. Elimination of parking will further minimize the need for R/W. Therefore the parking will be removed and not replaced with the new roadway widening.

While all of the widening within this segment can be completed within the R/W, a retaining wall is still required to contain the slopes adjacent to a historical power tower. Near Sta 1780+00, north of the highway, there is an existing power tower. While the tower itself is not in conflict, the guy wires supporting the structure are. Provisions must be made to keep the tower in place, and provide the necessary support.

As the improvements cross over Stone Avenue, the bridge supporting US 60 over Stone Avenue will require widening. The existing structure, while structurally sufficient, does not meet current standards for vertical clearance over Stone Avenue. The current clearance (as originally designed) is 14-ft. Widening the bridge and providing the necessary cross slope for US 60, will only reduce the clearance. The bridge provides opportunities for residents and children to cross under US 60 without having to watch for traffic. As there are several other opportunities for truck traffic and high-clearance vehicles to enter/access US 60, it is the recommendation of the DCR to simply widen the bridge and not provide the suggested vertical clearance. As this recommendation is contrary to current standards, a design exception for this recommendation is included at the end of Section 6.

As the improvements approach SR 177, the terminus of this study, the roadway section will transition from a 5-lane section to a 4-lane section with no median turn lane. The SR 177/US 60 interchange is currently being improved to provide separate on- and off-ramps on the west side for the interchange. The recently proposed ramp improvements west of the interchange will transition directly into the outside lanes of the widened roadway section. East of the new ramp gores, only two through lanes will continue under the SR 177 structure, as exists today. No additional improvements will be made to the structure itself as part of this study as there is no means to continue a 4-lane section beyond the bridge at this time.

5.3 Evaluation of Alternatives

An evaluation was made of each design concept alternative based upon the project objectives and evaluation factors described in Section 1.4.

The evaluation criteria were divided into three major categories: Design, Social and Economic, and Environmental Factors. A summary of the evaluation is presented in Table 5-1.

Table 5-1: Alternatives Evaluation

Design Evaluation Factors	A-1 (MP 211.7 to MP 215.2)	B-2 (MP 215.2 to MP 219.9)	B-2a (MP 215.2 to MP 219.9)
Vertical Alignment	• Rolling terrain. • Road segment grade would be <5%.	• Rolling terrain from MP 215.18 to TNF Boundary (MP 217.34), mountainous terrain from TNF Boundary to MP 219.92. • Proposed grade throughout would be less than 6%.	• Rolling terrain from MP 215.18 to TNF Boundary (MP 217.34), mountainous terrain from TNF Boundary to MP 219.92. • Proposed grade throughout would be less than 6%.
Horizontal Alignment	• Good horizontal alignment	• Adequate horizontal alignment • One minimum radius curve at the Gonzales Pass Summit • Adequate traffic separation providing a divided roadway with minimum separation throughout	• Good horizontal alignment • One minimum radius curve at the Gonzales Pass Summit • Independent alignments providing greater separation of opposing traffic than Alternative B2
Change of Access	• Segment declared access controlled on US 60. Therefore, all access would ultimately be limited to interchange locations (Florence Junction & Queen Valley Road)	• Controlled access to MP 217.3 (Forest Boundary) • 9,100 linear feet south frontage road/access road from western terminus of segment to Mineral Mountain Road (MP 215.8) and Dromedary Peak Road (MP 217.0) • Maintain two El Paso Natural Gas (EPNG) maintenance access turnouts on new roadways	• Controlled access to MP 217.3 (Forest Boundary) • 9,100 linear feet south frontage road/access road from western terminus of segment to Mineral Mountain Road (MP 215.8) and Dromedary Peak Road (MP 217.0) • Maintain two El Paso Natural Gas (EPNG) maintenance access turnouts on new roadways
Constructability and Maintenance of Traffic During Construction	• Mainline construction for EB US 60 can be easily constructed while traffic is maintained on existing WB US 60 • Queen Valley Road TI will be stage constructed. Ramps will be constructed first. Balance of Interchange will be constructed while traffic is maintained on the ramps • Any construction detours would be temporary and minor	• New EB lanes constructed from MP 215.2 to 219.5, and new WB lanes constructed from MP 218.3 to 219.4 • Staged construction and construction detours would be necessary in the vicinity of Gonzales Pass (MP 218.4 to 218.8), where improvements transition from the south side of the road to the north side • Once new lanes are completed, traffic can generally be shifted to the new lanes while the existing lanes are reconstructed	• New EB lanes constructed from MP 215.2 to 219.5, and new WB lanes constructed from MP 218.3 to 219.4 • Staged construction and detours will be necessary in the vicinity of Gonzales Pass (MP 218.4 to 218.8), where improvements transition from the south side of the road to the north side • Once new lanes are completed, traffic can generally be shifted to the new lanes while the existing lanes are reconstructed
Earthwork	• As most of the terrain is flat, borrow will be required for construction of Queen Valley Road TI	• New EB roadway is on the side of a steep ravine for 1.2 miles – substantial cuts and fills along the south side of the ravine will be necessary to construct the EB roadway • Earthwork east of Gonzales Pass also includes major cuts and fills.	• New EB roadway is on the side of a steep ravine for 1.2 miles – substantial cuts and fills along the south side of the ravine will be necessary to construct the EB roadway • Major cut and fill sections required on westbound (WB) roadway east of Gonzales Pass as the varying median separation has greater earthwork requirements.
Reuse of Existing Roadway	• Existing US 60 pavement will be maintained for WB traffic in all portions of A-1 except from MP 213.72 to MP 214.63 (Queen Valley Road TI). • The existing roadway at Queen Valley Road TI will need to be reconstructed to provide the new, elevated profile.	• Existing US 60 used for WB lanes from MP 214.3 to 218.5 and EB lanes from MP 218.8 to 219.4	• Existing US 60 used for WB lanes from MP 214.3 to 218.5 and EB lanes from MP 218.8 to 219.4

Preferred Alternative:

Table 5-1: Alternatives Evaluation

Social and Economic Evaluation Factors	A-1 (MP 212.7 to MP 215.2)	B-2 (MP 215.2 to MP 219.9)	B-2a (MP 215.2 to MP 219.9)
Utility and Railroad Conflicts	• Intersects Magma Arizona Railroad (BHP Copper) at MP 214.2 and Arizona Water 12-inch water line at MP 214. US West overhead phone line from MP 211.9 to 214.2 • Relocation of approximately 2,500 feet of APS overhead power line • Relocation of 3000 linear feet of overhead telephone line on the north side of US 60 near SR 79 • Relocation of the 12" water line under the Queen Valley Road TI	• Intersects EPNG pipeline at MP 216.5, 217.6, and 218.5. • No impacts to Southwest Gas 3-inch pipeline that extends north from the EPNG pipeline near MP 216.9 • Relocation of 800 linear feet EPNG pipeline	• Intersects EPNG pipeline at MP 216.5, 217.6, and 218.5. • No impacts to Southwest Gas 3-inch pipeline that extends north from the EPNG pipeline near MP 216.9 • Relocation of 800 linear feet EPNG pipeline
Reduction in recreation opportunities	• No impacts	• No impacts • Access to recreation area and shooting range maintained at Mineral Mountain Road	• No impacts • Access to recreation area and shooting range maintained at Mineral Mountain Road
Displacements	• No business or residential displacements	• No business or residential displacements	• No business or residential displacements
Cost	• Total estimated cost is $41,943,800, including $2,344,000 for design and $10,000,000 for right-of-way acquisition.	• Total estimated cost is $17,264,900, including $982,600 for design and $2,000,000 for right-of-way acquisition.	• Total estimated cost is $17,313,700, including $986,200 for design and $2,000,000 for right-of-way acquisition.
Noise Impacts	• No impacts to two residences in vicinity of Florence Junction	• No receptors in vicinity	• No receptors in vicinity
Right-of-Way Requirements		• 40 acres of State Trust Lands required • 109 acres of TNF lands required	• 254 acres of State Trust Lands required • 123 acres of Tonto National Forest (TNF) lands required
Visual Impacts	• Cut and fill impacts minimal.	• Cut and fill impacts minimal except through Gonzales Pass. • West of Gonzales Pass, EB cuts/fills will be visible from the WB roadway. East of the pass, the roadway will include a graded median, with similar cuts/fills as exist today. • TNF VQO is Retention	• EB lanes south of existing roadway generally follow a ridge – impacts are minimal. Just west of Gonzales Pass, cuts/fills will be visible from the WB roadway. • New WB roadway east of Gonzales Pass has significant cuts/fills that will be visible from both the EB and WB roadways. • TNF Visual Quality Objective (VQO) is Retention
Environmental Justice/ Title VI	• No impacts	• No impacts	• No impacts
Land Use Impacts		• 149 acres no longer available for wildlife habitat, grazing, or future development	• 377 acres no longer available for wildlife habitat, grazing, or future development

Table 5-1: Alternatives Evaluation

Environmental Evaluation Factors	A-1 (MP 212.7 to MP 215.2)	B-2 (MP 215.2 to MP 219.9)	B-2a (MP 215.2 to MP 219.9)
Historical/Archeological Resources	• Intersects one historic road at MP 214.5 • Impacts two potentially eligible prehistoric artifact scatter sites • Potential impacts to segments of historic US 60	• Intersects historic road segments at MP 215.4 and a network of several historic road segments from MP 217.0-220.0 • Possible impact to a potentially eligible prehistoric artifact scatter site • Potential impacts to segments of historic US 60	• Intersects historic road segments at MP 215.4 and a network of several historic road segments from MP 217.0-220.0 • Possible impact to a potentially eligible prehistoric artifact scatter site • Potential impacts to segments of historic US 60
Wildlife Habitat Impacts - Upland Habitat - Riparian Habitat Travel Corridors Crossed	• No riparian impacts	• No riparian impacts • Big horn sheep observed along US 60 east of Gonzales Pass • Reymert Wash, at the eastern terminus of Segment B, serves as a wildlife crossing	• No riparian impacts • Big horn sheep observed along US 60 east of Gonzales Pass • Reymert Wash, at the eastern terminus of Segment B, serves as a wildlife crossing
Impacts to Waters of the U.S.	• Relocation of about 600 linear feet of minor wash for realigned El Camino Viejo	• Individual 404 Permit possibly needed due to relocation of 2800 linear feet of wash in the vicinity of Gonzales Pass • New bridge near MP 218 • Approximately 5 new CBC and 27 new CMP crossings	• A drainage located within the median for the majority of this segment west of Gonzales pass may require some realignment • New bridge near MP 218 • Approximately 5 new concrete box culvert (CBC) and 31 new corrugated metal pipe (CMP) crossings
Floodplain Impacts	• US 60 is within Floodplain Zone C throughout this segment, except at MP 213.1 where Floodplain Zone A is intersected	• US 60 is within Floodplain Zone C from MP 215.2 – 217.4 • The flood hazard in the rest of this segment is undetermined	• US 60 is within Floodplain Zone C from MP 215.2 – 217.4 • The flood hazard in the rest of this segment is undetermined
Endangered/Threatened (E/T) Species	• Impact to potential habitat for cactus ferruginous pygmy owl and foraging habitat for lesser long-nosed bat	• Impact to potential habitat for cactus ferruginous pygmy owl and foraging habitat for lesser long-nosed bat	• Impact to potential habitat for cactus ferruginous pygmy owl and foraging habitat for lesser long-nosed bat
Invasive Species	• No occurrences of invasive species in the project vicinity identified through SWEMP online database. • Field survey to be done during final design	• No occurrences of invasive species in the project vicinity identified through SWEMP online database. • Field survey to be done during final design	• No occurrences of invasive species in the project vicinity identified through SWEMP online database. • Field survey to be done during final design
Hazardous Materials	• One existing and two abandoned gas stations located at the intersection of US 60 and SR 79 in Florence Junction, west of the area of right-of-way take for this project. • Proximity to small commercial/industrial site that includes a landing strip and may include a mechanics shop in association with the existing gas station	• No concerns identified	• No concerns identified
Boyce Thompson Arboretum	• No impacts	• No impacts	• No impacts

Table 5-1: Alternatives Evaluation

Design Evaluation Factors	C-1a (MP 219.9 to MP 222.3)	C-2 (MP 219.9 to MP 222.3)	D-2 (MP 222.3 to MP 224.8)	E-1 (MP 224.8 to MP 226.8)
Vertical Alignment	• Rolling terrain. • Road segment grade is <5%.	• Rolling terrain. • Road segment grade is <5%.	• Rolling terrain. • Road segment grade is <5%.	• Rolling terrain. • Road segment grade is <5%.
Horizontal Alignment	• Best horizontal alignment • Best separation of opposing traffic	• Adequate horizontal alignment • 84-foot median provides adequate traffic separation	• Good horizontal alignment • Good separation of opposing traffic (84 to 1,370 feet)	• Good horizontal alignment • No separation of opposing traffic
Change of Access	• 620 linear feet of paved median crossovers at three locations • Two right-in/right-out paved turnouts	• 120 linear feet of paved median crossovers at two locations • Two right-in/right-out paved turnouts	• 800 linear feet of paved median crossovers at one location • Relocation of access for residents between existing and realigned US 60. • Continued use of existing US 60 to provide access to Arboretum	• Restrictions in turning movements and consolidation of access points during construction • Removal of street parking • Access to developed area provided by means of a center left turn lane
Constructability and Maintenance of Traffic During Construction	• New EB lanes constructed while traffic is maintained on existing US 60 • Once new lanes are completed, all traffic shifted to the new EB lanes while the existing lanes are reconstructed • Any construction detours would be temporary and minor	• New WB lanes constructed from MP 220.0 to 220.9, and new EB lanes constructed from MP 221.5 to 222.2 while traffic is maintained on existing US 60 • Staged construction and construction detours would be necessary from MP 220.9 to 221.5, where improvements transition from the north side of the road to the south side • Once new lanes are completed, traffic can generally be shifted to the new lanes while the existing lanes are reconstructed	• New EB and WB lanes constructed while traffic is maintained on existing US 60 • Once new lanes are completed, all traffic shifted to the new lanes while the existing lanes are reconfigured to provide local access to the Arboretum • Staged construction and construction detours would be necessary at the beginning and end of the segment • Any construction detours would be temporary and minor	• Traffic will be maintained through the construction zone while to road is widened to a five-lane roadway. This would necessitate ongoing traffic control measures and staged construction. • Construction detours would be temporary and minor
Earthwork	• 500 linear feet 30-foot cut near western terminus of segment • 300 linear feet 20-foot cut near MP 222.09	• 700 linear feet 20-foot cuts at various locations • 900 linear feet fill along Queen Creek	• 1,300 linear feet 10-foot to 20-foot cut between MP 223.13 and MP 223.47	• No substantial cuts or fills
Reuse of Existing Roadway	• Existing US 60 reconstructed as new WB lanes	• Existing US 60 used for EB lanes from MP 220.0 to 220.9 and WB lanes from MP 221.5 to 222.2	• Portions of existing US 60 would be reused to provide local access to the Arboretum • ADOT would obliterate portions of US 60 that are not to be reused	• Existing US 60 fully incorporated into the new five-lane roadway

Table 5-1: Alternatives Evaluation

Social and Economic Evaluation Factors	C-1a (MP 219.9 to MP 222.3)	C-2 (MP 219.9 to MP 222.3)	D-2 (MP 222.3 to MP 224.8)	E-1 (MP 224.8 to MP 226.9)
Utility and Railroad Conflicts	• EPNG maintains a pipeline located 15 to 1400 feet north of existing US 60 along entire length of this segment • No utilities conflicts have been identified in this segment	• EPNG maintains a pipeline located 15 to 1400 feet north of existing US 60 along entire length of this segment • No utilities conflicts have been identified in this segment	• Intersects EPNG pipeline at MP 222.2, 222.5, 223.2, 223.8, and 224.0 • Relocation of 1600 linear feet EPNG pipeline • Potential impacts to Magma Arizona Railroad (BHP Copper) from MP 224.0 to 224.2 • Overhead telephone line located north of US 60 near MP 223.6 and remains south of existing roadway alignment	• Several utility crossings – including Arizona Public Service Company, Arizona Water Company, Southwest Gas, SRP, and US West • APS, US West, and WonderCom Cable TV lines are attached to utility poles overhead • No utility conflicts have been identified in this segment
Reduction in recreation opportunities	• 250-foot median at crossing of the Arizona Trail • No other notable impacts	• 108-foot median at crossing of the Arizona Trail • No other notable impacts	• Improved opportunities to expand or develop Arboretum	• No impacts
Displacements	• No impacts	• No impacts	• One residence impacted • Appears to avoid most other private property structures	• No impacts
Cost	• Total estimated cost is $9,668,000, including $708,700 for design and $0 for right-of-way acquisition.	• Total estimated cost is $8,597,800, including $592,400 for design and $500,000 for right-of-way acquisition.	• Total estimated cost is $16,556,200, including $1,004,200 for design and $2,000,000 for right-of-way acquisition.	• Total estimated cost is $8,968,100, including $638,400 for design and $100,000 for right-of-way acquisition.
Noise Impacts	• No impacts	• No impacts	• Potential impacts to receptors at three residences	• Potential impacts to numerous residential and business receptors
Right-of-Way	• 2.5 acres Private land • 1 acre Arboretum land • 113 acres TNF land	• 2.5 acres Private land • 1 acre Arboretum land • 34 acres TNF land	• 12 acres Private land • 25 acres Arboretum land • 92 acres TNF land	• No new right-of-way acquisition is anticipated
Visual Impacts	• Impacts minimized from MP 220.0 to MP 221.2 by positioning new lanes to follow the topography along an independent alignment • From MP 221.2 to 222.2, new lanes require more cut and fill than Alternative C1 • Cut and fill impacts are concentrated near MP 220.0 and 221.8-222.2 • TNF VQO is Retention	• More cut and fill impacts than Alternatives C-1 or C-1A • Cut and fill impacts minimal except near MP 220.6-220.7, 221.3, 221.8-222.2 • TNF VQO is Retention	• New alignment would change the character of a currently undeveloped area. • Roadway would not be visible from the Arboretum • Alignment would follow the topography to minimize cut and fill • TNF VQO is Retention	• No major cuts or fills • Widening to a 5-lane section would be visually apparent from adjacent developed lands
Environmental Justice/Title VI	• No impacts	• No impacts	• No impacts	• No impacts
Land Use Impacts	• 116 acres no longer available for wildlife habitat, grazing or future development • Private property on the north remains developable and contiguous	• 37 acres no longer available for wildlife habitat, grazing or future development • Private property remains developable and contiguous	• 129 acres no longer available for wildlife habitat • 104 acres no longer available for grazing or future development • Picket Post property remains intact and developable • Arizona State Board of Regents property remains intact	• No impacts

Table 5-1: Alternatives Evaluation

Environmental Evaluation Factors	C-1a (MP 219.9 to MP 222.3)	C-2 (MP 219.9 to MP 222.3)	D-2 (MP 222.3 to MP 224.8)	E-1 (MP 224.8 to MP 226.9)
Historical/Archeological Resources	• Intersects historic road segments at MP 220.0 - 220.5, 221.0 and 222.0 • Tangent to potentially eligible historic Nicholas Ranch at MP 221.3-221.5 • Impacts two potentially eligible and one eligible prehistoric artifact scatters • Potential impacts to segments of historic US 60	• Intersects historic road segments at MP 221.0 and 222.0 • Tangent to potentially eligible historic Nicholas Ranch at MP 221.3-221.5 • Impacts two potentially eligible and one eligible prehistoric artifact scatters • Potential impacts to segments of historic US 60	• Avoids impacts to NRHP-listed Arboretum • Intersects several historic road and phone line segments from MP 222.2-223.0 and 223.3-224.4 • Abuts eligible historic Magma Railroad grade between MP 223.1 and MP 224.3 • Impacts five potentially eligible prehistoric sites and one prehistoric site of undetermined eligibility • Potential impacts to segments of historic US 60	• Intersects historic road segments at MP 224.8, 226.0 and 226.4 • Potential impacts to segments of historic US 60
Wildlife Habitat Impacts - Upland Habitat - Riparian Habitat Travel Corridors Crossed	• No riparian impacts	• No riparian impacts	• Possible riparian impacts at Queen Creek • Happy Camp Wash and Silver King wash serve as wildlife crossings	• Possible riparian impacts at Queen Creek
Impacts to Waters of the U.S.	• New 150-foot bridge over Reymert Wash, at western terminus of segment • Approximately 6 new CBC and 20 new CMP crossings	• New 75-foot bridge over Reymert Wash, at western terminus of segment • Approximately 7 new CBC and 16 new CMP crossings	• New 250-foot bridge over Queen Creek at MP 222.2 • New 100-foot bridge over Silver King Wash at MP 224.0 • New bridge over Happy Camp Wash at MP 222.9 • Approximately 2 new CBC and 4 new CMP crossings	• Potential widening of Queen Creek Bridge at MP 226.1
Floodplain Impacts	• The flood hazard in this segment is undetermined	• The flood hazard in this segment is undetermined	• The flood hazard in this segment is undetermined	• US 60 is within Floodplain Zone A at the Queen Creek Bridge at MP 226.1
Endangered/Threatened (E/T) Species	• Impact to potential habitat for cactus ferruginous pygmy owl and foraging habitat for lesser long-nosed bat	• Impact to potential habitat for cactus ferruginous pygmy owl and foraging habitat for lesser long-nosed bat	• Impact to potential habitat for cactus ferruginous pygmy owl and foraging habitat for lesser long-nosed bat	• Impact to potential habitat for cactus ferruginous pygmy owl and foraging habitat for lesser long-nosed bat
Invasive Species	• No occurrences of invasive species in the project vicinity identified through SWEMP online database. • Field survey to be done during final design	• No occurrences of invasive species in the project vicinity identified through SWEMP online database. • Field survey to be done during final design	• No occurrences of invasive species in the project vicinity identified through SWEMP online database. • Field survey to be done during final design	• No occurrences of invasive species in the project vicinity identified through SWEMP online database. • Field survey to be done during final design
Hazardous Materials	• Possible impacts from mining developments	• Possible impacts from mining developments	• Possible impacts from mining developments	• Seven former or active sites with underground storage tanks (USTs); three leaking UST incidents that have not yet been fully resolved • Possible impacts from automobile repair shops, industrial development and mining development
Boyce Thompson Arboretum	• No impacts	• No impacts	• 1.28-acre right-of-way take from undeveloped Arboretum lands at Queen Creek (MP 222.3). • Reduced noise level and visual intrusion from US 60 at developed portion of Arboretum. • Realignment of US 60 would allow for more cohesive management of the Arboretum property	• No impacts

5.4 Conclusions

5.4.1 Discussion

Using the evaluation summaries, a comparative analysis of the alternatives was made which lead to specific conclusions about the most appropriate alternative for each roadway segment. The analysis revealed that only a few evaluation factors were significant enough for determining which alternative was preferred.

During the Feasibility Study, Segments A, D and E were reduced to only one alternative concept being considered for improving the individual design segments. As such, there was no comparative analysis prepared. The following summary of the comparative analysis describes the key factors and differences used in arriving at a conclusion for the Build vs. No-Build Alternative, and the options studied within Segments B and C.

- **No Build vs. Build Alternatives**

  The No-Build Alternative involves no expenditure of funds and no apparent change to the environmental factors along US 60. However, the No-Build Alternative:

  - Will require continuing expenditures to rehabilitate and maintain the existing, aging roadway;

  - Will not fulfill the purpose and need of improving the capacity, safety, and traffic operational characteristics of the route.

  Therefore, the No-Build Alternative is unacceptable.

  Conclusion: **The No-Build Alternative is not recommended** and has been eliminated from consideration.

- **Alternatives B-2 and B-2a**

  While both of the alternatives meet the safety and capacity requirements, Alternative B-2 retains an "expressway" appearance with parallel roadways through the rugged terrain following Gonzales Pass. Alternative B-2a, however, blends in with the adjacent topography through use of independent alignments that retain both the vegetation and the natural terrain within the median of the two roadways. As this is the only real differentiation between the two alternatives, the independent alignments of Alternative B-2a are preferred.

  Conclusion: Alternative B-2a is preferred.

- **Alternatives C-1a and C-2**

  Both of the alternatives meet the safety and capacity requirements. Alternative C-1a provides a divided roadway with independent EB and WB roadway alignments that better follow the terrain to minimize cuts and fills. It provides a more pleasant driving experience by separating the roadways to maintain natural topography and vegetation in the median, thus hiding the opposing traffic for portions of the segment. Both provide similar access opportunities to Forest Service lands, and require similar amounts of R/W, neither requiring private property. However, C-1a does cross through portions of the original roadway corridor that have been abandoned and have since been deemed historic, and must therefore be avoided.

  Conclusion: Alternative C-2 is preferred.

5.4.2 Public Opinion

In addition to the Public Scoping Meetings held on January 28th and 29th, 1998 (Section 1.4.1), two Public Information Meetings were held; the first on August 5, 1999, and the second on June 19, 2001, both at the Roosevelt Junior High School in Superior to describe the project development process and present the results of the design concept development and analyses that had been completed to determine the preferred alternative. Over 100 people attended the initial information meeting, and over 70 people attended the second meeting. The preferred alternative for improving US 60 was generally well accepted and received support from most of those submitting comments.

A Public Hearing on the Draft Environmental Assessment was held on June 10, 2003 at Roosevelt Junior High School to present the preferred alternative and to receive comment by the public. Similar to previous meetings, the recommended alternative was well received. Most of the concern was focused on minimizing private property takes, especially those in the area adjacent to the Arboretum. A summary of the public comments received is provided in the Final Environmental Assessment.

5.4.3 Conclusions

Several alternative alignments have been developed and evaluated for improvement of US 60 between Florence Junction and the Town of Superior to enhance safety and traffic operational characteristics of the roadway and to meet current and future traffic needs. In addition to traffic and safety, several improvements were considered to enhance the roadway appearance while blending in with the adjacent landscape and potential development.

In conclusion, the following recommendations are made:

- A four-lane divided roadway is recommended throughout the US 60 corridor, except through the Town of Superior where a five-lane undivided roadway is recommended.

- Relocation outside of the existing highway corridor is not viable, nor necessary.

- Most of the existing roadway can be utilized if the pavement surface is maintained.

- Sequentially listed, the preferred alternatives are as follows:

Study Segment	Preferred Alternatives
A	A-1
B	B-2a
C	C-2
D	D-2
E	E-1